

L 30367-66 EWT(m)/EWP(t)/ETI IJP(c) JD/WH

ACC NR: AT6012381

SOURCE CODE: UR/0000/65/000/000/0130/0137

AUTHORS: Tomashov, N. D.; Modestova, V. N.; Flavich, L. A.; Averbukh, A. M.

41
40

ORG: none

B+1

TITLE: The effect of hydrogen absorption on the electrochemical behavior of titanium

21

SOURCE: Soveshchaniye po metallokhimii, metallovedeniyu i primeneniyu titana i yego splavov, 6th. Novyye issledovaniya titanovykh splavov (New research on titanium alloys); trudy soveshchaniya. Moscow. Izd-vo Nauka, 1965, 130-137

TOPIC TAGS: titanium, cathode polarization, anodic oxidation, sulfuric acid, corrosion resistance, electrode potential, hydrochloric acid / VT1 titanium

ABSTRACT: The effect of preliminary cathode polarization on the subsequent anodic dissolution and anodic oxidation of titanium is studied. The specimens were prepared from VT1 titanium with the impurities (wt %): 0.03 Fe, 0.03 Si, 0.05 C, 0.06 Cl, 0.03 N, and 0.1 O. The specimens were annealed for 2 hrs at 800C. Potentiostatic curves were plotted for titanium and titanium with a hydride layer in a 3-N solution of H₂SO₄ (see Fig. 1). Anodic dissolution of titanium with a hydride layer was found to occur with greater retardation than that of titanium without a layer.

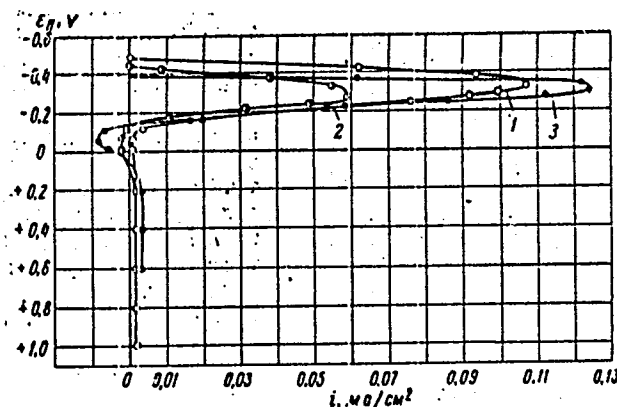
Card 1/2

L 30367-66

ACC NR: AT6012381

Fig. 1. Anodic potentiostatic curves plotted in 3-N solution of H_2SO_4 :

1 - titanium; 2 - titanium with cathode polarization for 1 hr with a current of 5 mA/cm^2 ; 3 - same, after 18 hrs of cathode polarization.



In the range of active anodic dissolution, the surface of the titanium with and without a hydride layer was oxidized. In anodization of titanium with a hydride layer, an oxide is formed on the hydride layer. In anode oxidation, the titanium ions are chiefly diffused from the metal through the hydride layer. The relative stability of titanium in solutions of acids where corrosion occurs with hydrogen depolarization is due to hydride-oxide passivity. Orig. art. has: 1 table and 5 figures. ✓

SUB CODE: 11/ SUBM DATE: 02Dec65/ ORIG REF: 010/ OTH REF: 006

Card 2/2 CC

PHASE I BOOK EXPLOITATION SOV/5745

Averbukh, Aron Moiseyevich, and Khariton Aronovich Rybak

Zadachi po releynoy zashchite i metody ikh resheniya (Problems in Relay Protection and Methods for Their Solution) Moscow, Gosenergoizdat, 1961. 351 p. Errata slip inserted. 12,000 copies printed.

Ed.: V. Yu. Gessen; Tech. Ed.: O. S. Zhitnikova.

PURPOSE : This book is intended as a textbook for students in power- and electrical-engineering tekhnikums.. It may also be used by students in schools of higher education for courses in relay protection and for degree projects, and by technical personnel concerned with the operation and designing of relay protection.

COVERAGE: The book contains problems on relay protection and on certain arrangements of automation systems and gives methods of solving them. It also introduces problems on the application

Card-1/6-

Problems in Relay Protection (Cont.)

SOV/5745

of the method of symmetrical components for the simplest cases of asymmetrical short circuits. Chs. I, III, V, VI, VII, and IX were written by A. M. Averbukh, Chs. II, IV, VIII, and X by Kh. A. Rybak. The authors thank M. A. Berkovich, reviewer of the book, V. Yu. Gessen, and Engineer M. A. Shabad. There are 41 references, all Soviet.

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Card 2/6	

AVERBUKH, Aron Moiseyevich; RYBAK, Khariton Aronovich; BERKOVICH, M.A.,
retsensent; GESSEN, V.Yu., red.; ZHITNIKOVA, O.S., tekhn. red.

[Problems of relay protection and methods for solving them]
Zadachi po releinoi zashchite i metody ikh reshenia. Moskva,
Gos. energ. izd-vo, 1961. 351 p. (MIRA 14:8)
(Electric relays) (Electric protection)

BARZAM, Anatoliy Bentsionovich; AVERBUKH, A.M., retsenzent; SATUROV,
V.A., inzh., red.; FRIDKIN, L.M., tekhn. red.

[Uchebnoe proektirovanie releinoi zashchity i avtonatiki ener-
geticheskikh sistem. Moskva, Gosenergoizdat, 1962. 191 p.
(MIRA 15:12)

(Electric power distribution) (Electric protection)
(Automatic control)

AVERBUKH, A.M.; NOVITSKIY, M.A.; SOKOLOV, L.A.; LUKOVTSSEV, P.D.; SOKOLOV, L.A.;
LUKOVTSSEV, P.D.

Anodic oxidation of iodide on a platinum microelectrode.

Part 2: Effect of the electrolyte stirring and of the
rate of potential change. Elektrokhimiya 1 no.3:251-254

Mr '65.

(MIRA 18:12)

1. Institut elektrokhemii AN SSSR.

AVERBUKH, A.S.

Differential diagnosis of atherosclerotic and hypertensive psychoses. Zhur. nevr. i psikh. 55 no.6:453-457 '55. (MLRA 8:8)

1. Psikhonevrologicheskii nauchno-issledovatel'skiy institut imeni V.M.Bekhtereva (dir.-prof. V.N.Myasishchev)

(ARTERIOSCLEROSIS, complications,

psychoses, differ. diag. from hypertensive psychoses)

(HYPERTENSION, complications,

psychoses, differ. diag. from atherosclerotic psychoses)

(PSYCHOSIS, etiology and pathogenesis,

atherosclerosis & hypertension, differ. diag.)

AVERBUKH, A.Ya.

Working days of a voluntary machinery-design bureau. Mashinostroitel'
no.3:43-44. Mr '62. (MIRA 15:3)
(Volgograd-Tractor industry)

А. В. Е. П. Н. А. 1/2

Obituary Abst.
Vol. 48 No. 8
Apr. 25, 1954
Apparatus, Plant Equipment,
and Unit Operations

Apparatus for determining nitrogen in gas mixtures
G. Lesokhin, B. A. Kopylov, and I. Ya. Averbukh (Leningrad Technol. Inst.). J. Anal. Chem. (USSR), 1953, 8, 1-6 (1953) (Engl. translation) - See C. A. 47, 1953g.

AVERBUKH, A. YA.

D. I. Mendeleev's ideas on the production of concentrated nitric and sulfuric acids. Zhur. prikl. khim. 25 No. 8, 1952.

SO: MLFA. November 1952.

AVERBUKH, A. YA.	
✓ Aleksandr Aleksandrovich Fader, 1910-1955	A. Ya.
Averbukh, J. Appl. Chem. U.S.S.R., 25, 1177-34 (1952)	
U.S. Pat. 2,611,111	See C.A. 47, 8951h H. L. H.

1/7/55
MA

KOPYLEV, B.A., (Leningrad); AVERBUKH, A.Ya., (Leningrad).

Glass manufacture. Khim. v shkole no. 3:13-20 My-Je '53. (MIRA 6:7)
(Glass manufacture)

AVERBUKH, A. Ya.

USSR.

Absorption vessels for gas analysis. A. Ya. Averbukh.
Trudy Leningrad. Tekhnol. Inst. im. B. P. Konstantinovskogo, No. 1959, No. 27, 152-4; Refr. Zhur., Khim. 1956, No. 3, 64. —A no. of simple, compact absorption vessels for Orsat and VTI gas analyzers are described.

BB
MET

AVERBUKH, A. Ya.

USSR.

Pipets for sampling and storing gas: A. Ya. Averbukh.
Trudy Leningrad. Tekhnol. Inst. im. Lenina 1933, No. 27,
155-7; *Referat. Zhur. Khim.* 1934, No. 27021. Two modi-
fications of pipet banks for sampling and storing gas are de-
scribed.
M. H.

AA
gen

AVERBUKH, A-Ya.

rej

USSR

Grigorii Aleksandrovich Zhabudnik (1854-1930). A. Ya.
Averbukh. Zhur. Priklad. Khim. 27, 801-3(1954).—Brief
summary of Z.'s work in chem. technology, on occasion of
the 100th anniversary of his birth. Bibliography of 10
references. G. M. Kosolapov.

VERBUKH, A.Ya., kand.khim.nauk; ZHUKOVA, V.I., inzh.,red.; KLOPOVA, T.B.,
tekh.n.red.

[Apparatus used for semimicrogas analysis and determination of nitrogen in the composition of gas mixtures; practices of the Lensevet Technological Institute in Leningrad] Pribery, primeniamye dlia polumikrogazovogo analiza i opredeleniia azota v sostave gazovykh smesei; iz opyta Leningradskogo Tekhnologicheskogo instituta imeni Lenseveta. Leningrad, 1955. 11 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.112(800)) (MIRA 10:12)

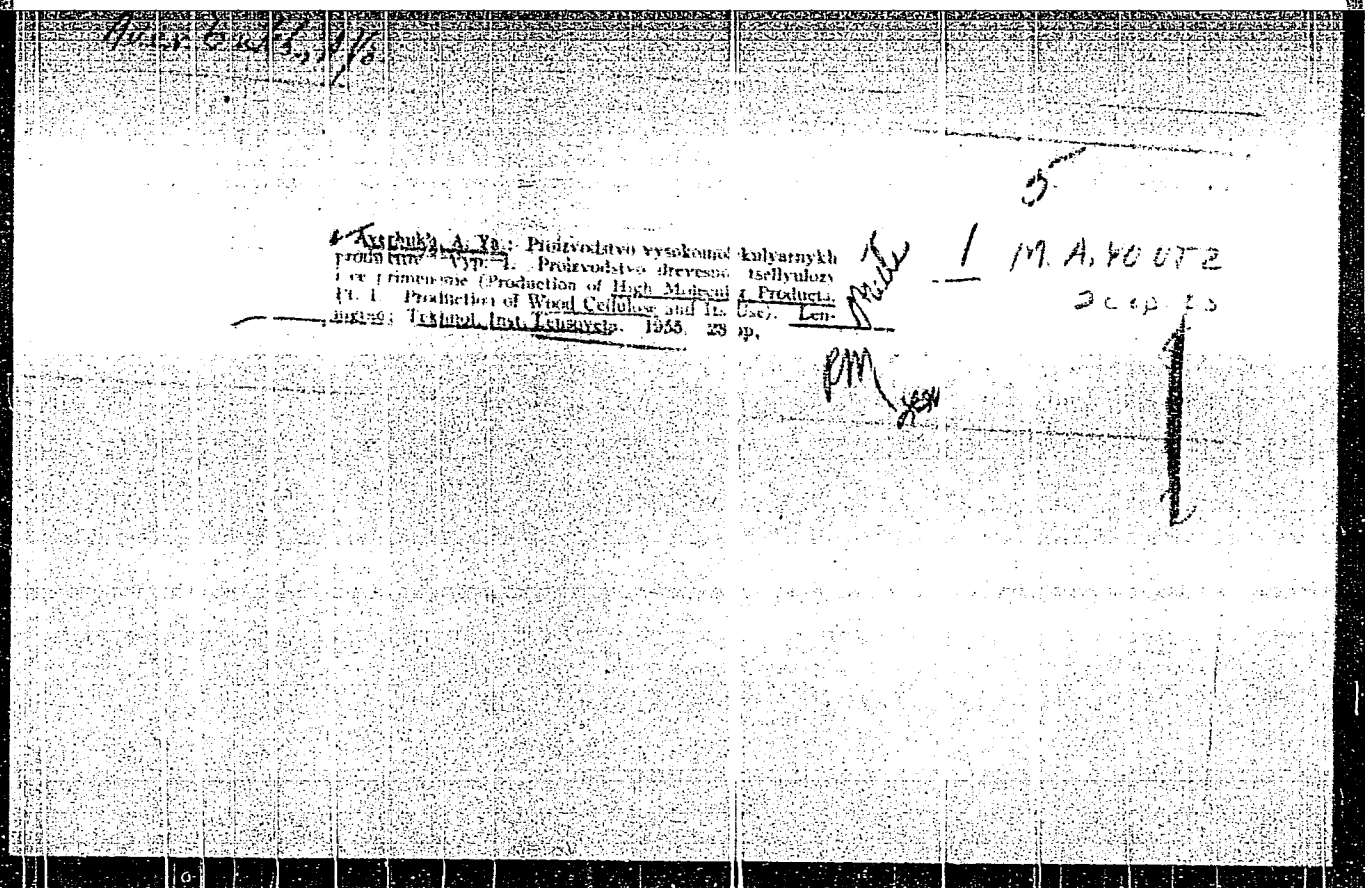
(Gases--Analysis)

(Nitrogen)

АВЕРБУХ, А.Я.

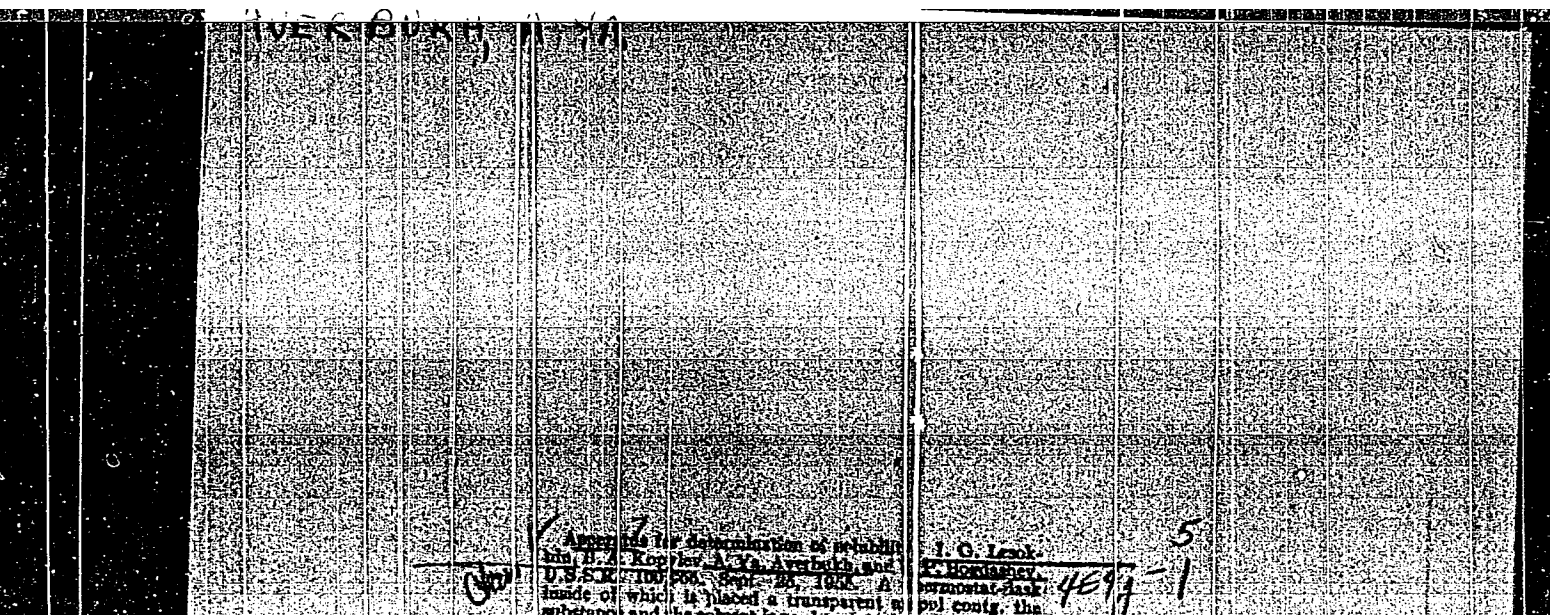
АВЕРБУХ, А.Я.; ЗГУКУВУ, В.И., инж., ред.; КУПУВУ, Т.Б., техн.ред.

[Separating, preserving and analyzing gas mixtures; practices of the Lensevet Textile Institute in Leningrad] Otbor, khranenie i analiz gazovykh smesei; opyt LTI imeni Lenseveta. Leningrad, 1955. 18 p. (Leningradskii dom nauchno-tekhnicheskoi propagandy. Informatsionno-tekhnicheskii listok, no.95(783)) (MIRA 10:12)
(Gases--Analysis)



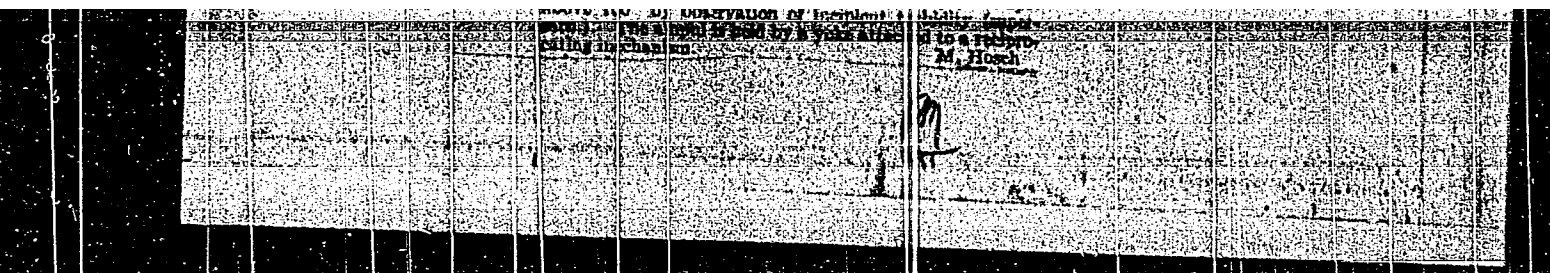
YEREMINA, B.G.; AVERBUKH, A.Ya., redaktor; ERLIKH, E.Ya., tekhnicheskii
redaktor

[Analysis of gases] Gazovyi analiz. Leningrad, Gos.nauchno-
tekh.isd-vo khim.lit-ry, 1955. 379 p. (MLRA 9:1)
(Gases--Analysis)



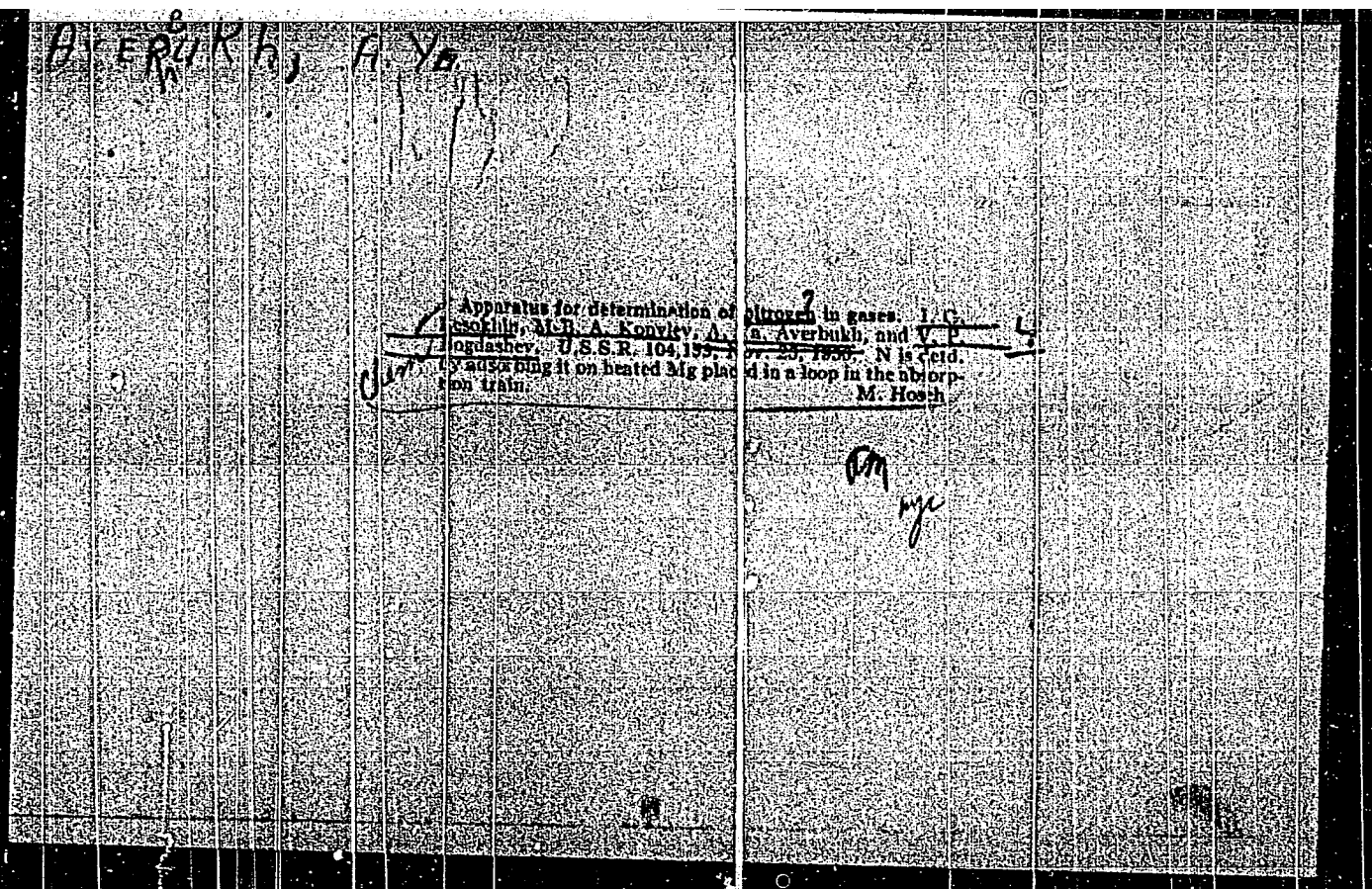
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AYERDUGH, A. V. 19

Gas-spike tubes. A. Ya. Ayer and V. P. Bogdanov. *Trudy Leningrad. Tekhn. Inst. im. Leningra*
1946, No. 35, 180-90. — A tube with a notch directed towards
the gas flow is placed in the gas conduit. Another tube
provided with 4-6 round holes aligned with the notch is
placed inside the tube. The gas spike is easily regulated.
The tubes are made of iron for temps. ranging from 200 to
600°; for use at higher temps., the tubes are made of quartz
or porcelain. Three variations of the tubes are described.
Sonya G. Macchelson

AVERBUKH, A. YA.

USSR/Laboratory Equipment - Instruments. Their Theory,
Construction and Application.

H.

Abs Jour : Referat Zhur - Khimiya, No 6, 1957, 19811

Author : A.Ya. Averbukh.

Inst : Lensovet Technological Institute, Leningrad.

Title : Construction of Loop for Gas Combustion at Gas Analysis.

Orig Pub : Tr. Leningr. tekhnol. in-ta im. Lensoveta, 1956, vyp. 35,
191-192

Abstract : The loop (L) of a stainless steel pipe with an inside diameter of 5.6 to 6 mm and wall thickness ≥ 1 mm is hermetically connected with capillary branches (inside diameter 1.5 to 2 mm) by means of collar nuts, which permits easily to fill L with copper oxide and exchange it. The length of the capillaries depends on the system used for cooling the L ends.

Card 1/1

- 16 -

AVERBUKH AYA

A device for replacing the leveling
and in other gas substance 2 6
V. P. Journal. Trade Lenin
Summer 1936, No. 35, 193-4.—
lab. expts. is described.

Ys. **AVERBUKH** and
M. **MAKHLIN**, for
simple app. for use in
G. **Machelson**

DM gr //

AVERBUKH, A.Ya.

Sources of errors in carrying out gas analysis and means of preventing them. Trudy LTI no.48:233-235 '58. (MIRA 15:4)
(Gases--Analysis)

22(1)

SOV/3-59-5-18/34

AUTHOR: Vol'fkovich, S.I., Academician; Mukhlenov, P.P., Professor; Averbukh, A.Ya., Docent.

TITLE: Courses in General Chemical Technology

PERIODICAL: Vestnik vysshey shkoly, 1959, Nr 5, pp 60 - 65 (USSR)

ABSTRACT: In connection with the 7-year Plan the author stresses the necessity of training chemist-technologists and chemist-researchers with a broad scientific-technical outlook and profound understanding of chemical engineering. To this end instruction in chemical technology must be properly organized at technological institutes and universities. Contemporary chemical technology makes a broad use of the basic laws, regulations and methods of chemistry, physics, physical chemistry, as well as of mechanics, thermotechnics, electrical engineering and several other theoretical and economic subjects. Being the generalizing and basic course,

Card 1/3

SOV/3-59-5-18/34

The Courses in General Chemical Technology

"General Chemical Technology" combines the enumerated subjects with industrial production. It elucidates the basic directions, methods and means of development of chemical production. To make teaching of general chemical technology specific, the reading of lectures on this subject must go parallel with technological laboratory work, calculation exercises and industrial training. All these forms of instruction must be founded on a profound theoretical basis and with due regard to the technical economic aspects. It is equally important to disclose to the student the advantages offered by the socialist planned economy for solving technological problems on the basis of cooperation and combination of various industrial processes, complex reprocessing of raw-material and rational geographical distribution of industry, as well as for solving problems of intensification and automation of pro-

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SOV/3-59-5-18/34

. The Courses in General Chemical Technology

duction, raising productivity of labor, etc. It is important to know all this since it is intended to establish during the current 7-Year Plan, large combined enterprises, particularly with the complex re-processing of gases in oil recovery, of natural gases, and of gases produced by oil-refining plants and of other kinds of mineral raw material. The author indulges in extensive comments on teaching general chemical technology, and on how the course should be built up under the new working conditions of the higher school. In a few cases the author points out the experiences of the Leningrad Technological Institute and Moscow University.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov (Vol'fkovich); Leningradskiy tekhnologicheskii institut imeni Lensovet (Leningrad Technological Institute imeni Lensovet (Mukhlenov and Averbukh).

Card 3/3

AYERBUKH, A.Ya.

Fluidized bed processes in the technology of organic products.

Trudy LTI no.54:63-70 '59.

(MIRA 13:8)

(Fluidization)

(Organic compounds)

MUKHLENOV, I.P.; AVERBUKH, A.Ya.; TUMARKINA, Ye.S.

Use of the frothing method of interaction between liquid and gas
in organic technology. Trudy LTI no.54:125-128 '59.

(MIRA 13:8)

(Gases--Purification)

(Chemical engineering--Equipment and supplies)

(Chemistry, Organic)

AVERBUKH, A. Ya.

Vasilii Fomich Petrushevskii (works on explosives). Trudy
Inst. ist. est. i tekhn. 35:167-184 '61. (MIRA 14:9)
(Petrushevskii, Vasilii Fomich, 1829-1891)
(Explosives)

AVERBUKH, Anatoliy Yakovlevich, kand. khim. nauk; NIKOLAYEV, A.F.,
kand. khim. nauk, red.; FREGER, D.P., red. izd-va; BELOGUROVA,
I.A., tekhn. red.

[Wood plastics and wood chemicals; survey] Drevesnye plastiki
i khimicheskie produkty iz drevesiny; obzor. Leningrad,
Leningradskii Dom nauchno-tekhn. propagandy, 1962. 96 p.
(MIRA 15:3)

(Wood—Chemistry)

AVERBUKH, Anatoliy Yakovlevich, kand. khim. nauk; IVANOV, S.M.,
red.; RAKITIN, I.T., tekhn. red.

[This is made from wood] Eto iz drevesiny. Moskva, Izd-vo
"Znanie," 1962. 31 p. (Novoe v zhizni, nauke, tekhnika.
IV Seriya: Tekhnika, no.2) (MIRA 15:4)
(Wood-using industries)

AVERBUKH, A.Ya.

"History of chemical enterprises and chemical industries in
Russia up to the end of the 19th century" by P.M.Luk'ianov.
Reviewed by A.IA.Averbukh. Zhur.rikl.khim. 35 no.4:926-928 Ap
'62. (MIRA 15:4)
(Chemical industries) (Luk'ianov, P.M.)

AVERBUKH, A.Ye.; PROSKURYAKOV, V.A.; BAL'YAN, Kh.V., nauchnyy red.;
VOROB'YEV, G.S., red.isd-va; GURDZHIYEVA, A.M., tekhn.red.

[Chemical products from oil shale] Khimicheskie produkty iz
slantsa. Leningrad, Ob-vo po raspr. polit. i nauchn. znani
RSFSR, Leningr. otd-nie, 1961. 43 p. (MIRA 16:2)
(Oil shales)

AVERBUKH, Anatoliy Yakovlevich; BOGUSHEVSKAYA, Kseniya Konstantinovna;
ANDRONOVA, N.V., otv. za vypusk; NOVOCHADOVA, L.A., red.;
RAKITIN, I.T., tekhn. red.

[Chemistry and technical progress] Khimiia i tekhnicheskii progress; material k lektsii. Moskva, Izd-vo "Znanie," 1962. 41 p.
(MIRA 16:3)

1. Referent Pravleniya Vsesoyuznogo obshchestva po rasprostraneniyu politicheskikh i nauchnykh znaniy (for Andronova).
(Chemistry, Technical)

AVERBUKH, A.Ya.

D.I. Mendeleev and the Scientific and Technical Laboratory of
the Navy Department. Trudy Inst.ist.est.i tekhn. 39:222-247
'62.

(MIRA 16:2)

(Gunpowder, Smokeless)

(Mendeleev, Dmitrii Ivanovich, 1834-1907)

MUKHLENOV, I.P.; AVERBUKH, A.Ya.; SARKITS, V.B. [deceased]; VITVITSKIY, A.I.

Wear resistant catalyst for the conversion of methanol to
formaldehyde in a fluidized bed. Khim.prom. no.11:847-849 '63.
(MIRA 17:4)

AVERBUKH, A.Ya.; VITVITSKIY, A.I.; MUKHLENOV, I.P.; GUZENKOV, V.K.

Fluidized bed in formalin production. Izv.vys.ucheb.zav.; khim.
i khim.tekh. 7 no.2:301-306 '64. (MIRA 18:4)

1. Leningradskiy tekhnologicheskiy institut im. Lensoveeta
i zavod "Metil". Kafedra obshchey khimicheskoy tekhnologii.

MUKHLENOV, I.P., doktor tekhn. nauk, prof.; KUZNETSOV, D.A.;
AVERBUKH, A.Ya., TUMARKINA, Ye.S.; FURMER, I.E.;
ALAVEROV, Ya.G., red.; GOROKHOVA, S.S., tekhn. red.

[General chemical technology] Obshchaya khimicheskaya tekhnologiya. [By] I.P.Mukhlenov i dr. Moskva, Izd-vo "Vysshaia shkola," 1964. 628 p.
(MIRA 17:4)

UGRYUMOV, Pavel Grigor'yevich; AVERBUKH, Anatoliy Yakovlevich;
BELOTSVETOV, A.V., dots., retsenzent; L'VOV, S.V., prof.,
retsenzent; KOZLOV, V.V., red.

[Organic synthesis in industry; a manual for teachers and
students of pedagogical institutes; Organicheskiy sintez v
promyshlennosti; posobie dlia uchitelsi i studentov pedago-
gicheskikh institutov. Izd.2., perer. i dop. Moskva, Pro-
sveshchenie, 1964. 318 p. (MIRA 17:7)

MUKHLENOV, I.P.; AVERBUKH, A.Ya.; VITVITSKIY, A.I.

Effect of catalyst mixing on the process of conversion of
methanol to formaldehyde in a fluid bed. Zhur. prikl. khim.
37 no. 4:705-710 Ap '64. (MIRA 17:5)

1. Leningradskiy tekhnologicheskii institut imeni Lensoвета.

VITVITSKIY, A.I.; MUKHLENOV, I.P.; AVERBUKH, A.Ya.

Effect of temperature, space velocity, and properties of the catalyst on the conversion of methanol to formaldehyde in a fluidized bed. Zhur.prikl. khim, 37 no. 5:984-988 M, '64.
(MIRA 17:7)

1. Leningradskiy tekhnologicheskii institut imeni Lenseveta.

AVERBUKH, Anatoliy Yakovlevich; BOGUSHEVSKAYA, Kseniya Konstantinovna;
GRABOVSKIY-ZKONOPNITS, V.A., red.

[What chemistry makes from wood] Chto delaet khimiia iz dreve-
siny. Moskva, Lesnaya promyshlennost', 1964. 142 p.
(MIRA 18:3)

SOMINSKIY, Vladimir Samuilovich; Frinimal uchastiye AVERBUKH, A.Ya.,
kand. khim. nauk; KLIMENKO, K.I., doktor ekon. nauk,
retsenzent; ZAV'YALOVA, A.N., red.

[Economics of new productions] Ekonomika novykh proizvodstv.
Moskva, Ekonomika, 1965. 213 p. (MIRA 18:4)

SOMINSKIY, Vladimir Samuilovich. Prinimal uchastiye AVERBUKE, A.I.a.,
kand. khim. nauk; KLIMENKO, K.I., doktor ekon. nauk,
retsenzent; ZAV'YALOVA, A.N., red.

[Economics of new production] Ekonomika novykh proizvodstv.
Moskva, Ekonomika, 1965. 213 p. (MIRA 18:4)

AVERBUKH, Anatoliy Yakovlevich; SOPOVA, Aleksandra Semenovna;
BAL'YAN, Kh.V., nauchn. red.; SEGAL', Z.G., ved. red.

[What can be obtained from gas] Chto poluchaiut iz gaza.
Leningrad, Nedra, 1965. 175 p. (MIRA 18:5)

L 52551-65

EWI(s)/RPF(o)/RPR/EMP(j)/T

Pc

/Pr-1/Ps-1

RPI

WA/RM

ACCESSION NR: AP5011195

UR/0366/65/001/004/0799/0802

AUTHORS: Vitritskiy, A. I.; Mukhlenov, I. P.; Averbukh, A. Ya.

30
27
B

TITLE: The conversion of methanol through the intermediate product hydrogen peroxide

SOURCE: Zhurnal organicheskoy khimii, v. 1, no. 4, 1965, 799-802

TOPIC TAGS: hydrogen peroxide, conversion reaction, methanol, catalyst, formaldehyde

ABSTRACT: The literature appears contradictory in regard to dehydration and oxidation of formaldehyde and methanol, indicating that both may take place with the same catalyst, without explaining the mechanism. The authors suggest that hydrogen peroxide as an intermediate product explains the conversion process. Oxygen is adsorbed on silver. Methanol and formaldehyde, in reacting with this adsorbed oxygen, form hydrogen peroxide and formaldehyde (from methanol) or hydrogen peroxide and CO (from formaldehyde). This adsorbed hydrogen peroxide may react with CO, formaldehyde, or methanol to form water and, respectively, CO₂, CO, or formaldehyde. With increase in temperature, the atoms on the surface of the silver regroup and form free hydrogen peroxide molecules, which then desorb.

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L 52551-65

ACCESSION NR: AP5011195

The occurrence of this process may explain the phenomenon of a negative temperature coefficient, observed during oxidation of hydrocarbons. It may also explain the order of reaction during homogeneous decomposition of hydrogen peroxide. The desorption probably takes place at about 630-680K. The desorbed hydrogen peroxide then permits a number of homogeneous conversions. Since hydrogen peroxide is a polar molecule, oriented by the negative pole against the surface of the silver, it is natural that application of a negative potential to the silver will facilitate the desorption process and will lead to a higher degree of conversion. It follows, also, that the reaction below about 620K is heterogeneous, whereas it is heterogeneous-homogeneous at higher temperature. It is concluded that the denaturation and oxidation of methanol and formaldehyde are but two sides of a single process, affected through the intermediate product hydrogen peroxide. Orig. art. has: 10 formulas.

ASSOCIATION: Leningradskiy tekhnologicheskii institut imeni Lenseveta (Leningrad Technological Institute)

SUBMITTED: 29Feb64

ENCL: 00

SUB CODE: IC, CC

NO REF SOV: 026

OTHER: 015

2/2

AYERBUKH, A. Ye. and MOSHEVICH, I. Ye.

"Contemporary Method of Making a Graph Showing the Amount of Transportation Work at Metallurgical Factories," *Stal*, No.7, 1944

Dnepropetrovsk Metallurgical Inst. and Leningrad Polytechnical Inst.

AVERBUKH, Abram Yefimovich; BERLYAND, S.S., inzh., retsenzent, red.;
SIDOROV, V.N., inzh., red.izd-va; KARASEV, A.I., tekhn.red.

[Organization of railroad haulage at metallurgical plants]
Organizatsiia zheleznodorozhnykh peremovok na metallurgicheskikh
zavodakh. Moskva, Gos.nauchno-tekhn.izd-vo lit-ry po cherno i
tsvetnoi metallurgii, 1959. 483 p. (MIRA 12:4)
(Metallurgical plants) (Railroads, Industrial)

KARAYEV, S.; AVERBUKH, B.

Gasser of the Dashgil' area. Neftianik 7 no.5:25-26

My '62.

(MIRA 15:12)

(Kobystan--Gas, Natural--Geology)

AVERBUKH, B.

Contribution of petroleum workers. NTO 3 no.11:39 N '61.
(MIRA 14:10)

1. Uchenyy sekretar' soveta nauchno-tekhnicheskogo
obshchestva tresta "Azneft'erazvedka".
(Azerbaijan--Petroleum research)

AYERBUKH, B.A.

New method for reconditioning machine parts. Trudy MINKHOP no.29:
102-105 '60. (MIRA 13:12)

(Oil fields--Equipment and supplies)

KERSHENBAUM, Ya.M.; AVERBUKH, B.A.

New method for planting metals and alloys on parts of machines
by means of friction. Mash. i nef. sbor. no. 11:34-37 '63
(MIRA 17:87)

1. Moskovskiy ordena Trudovogo Krasnogo Znameni institut nef-
tekhimicheskoy i gazovoy promyshlennosti imeni akademika Gub-
kina.

KERSHENBAUM, Ya.M.; LYUDMIRSKAYA, N.G.; TY YUY-FON; AVERBUKH, B.A.

Nature of the adherence of a layer of white cast iron to steel
on plating by friction. Trudy MINKHIGP 46:213-219 '64.
(MIRA 17:6)

KERSHENBAUM, Ya.M.; LYURMIRSKAYA, N.G.; AVERBUKH, B.A.

Certain phenomena when building up bronze on steel by means
of friction. Trudy MINKHIGP 46:219-226 '64. (MIRA 17:6)

KERSHENBAUM, Ya.M.; AVERBUKH, B.A.

Characteristics of bronze deposition on steel by friction welding.
Avtom. svar. 17 no.3:19-22 Mr '64. (MIRA 17:11)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
im. I.M. Gubkina.

KERSHENBAUM, Ya.M., doktor tekhn. nauk; LYUMIRSKAYA, N.G., inzh.;
AVERBUKH, B.A., inzh.

Hard facing by friction of a wear-resistant layer of white
cast iron on steel. Svar. proizv. no.6:8-10 Je '65.

(MIRA 18:8)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
im. I.M.Gubkina.

L 12042-66 EWT(1)/EWA(h) GW
 ACC NR: AT5028870
 AUTHOR: Averbukh, A. G.
 SOURCE CODE: UR/2552/65/000/044/0079/0093
 ORG: All-Union Scientific Research Institute of Geophysical Prospecting Methods, Moscow (Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki)
 TITLE: Some kinematic characteristics of refracted waves
 SOURCE: Moscow. Vsesoyuznyy nauchno-issledovatel'skiy institut geofizicheskikh metodov razvedki. Prikladnaya geofizika, no. 44, 1965, 79-93
 TOPIC TAGS: seismic wave, seismic prospecting
 ABSTRACT: Properties of weakly refracted waves arising in the refracting medium at low velocity gradients and characterized by a slight increase (5-10%) in the apparent velocity along the travel time curve are discussed. Under these conditions, the kinematics of a refracted wave covering the refracting boundary differs very little from the kinematics of head waves. Inside the refracting medium, the differences between the kinematics of these two types of waves are very appreciable even at low velocity gradients. Specific features of the kinematics of

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L 12042-66

ACC NR: AT5028870

refracted waves are an increase in the apparent velocity along the travel time curve, the nonparallelism of the travel time curves, the terminus of the travel time curve beyond which the diffracted wave glancing along the trough of the refracting wave can be recorded, and the existence of two types of multiple waves formed as a result of the refraction effect. At a slight degree of refraction, the curvature and nonparallelism of the travel time curves of refracted waves are slight and can be taken as the travel time curves of the head waves. At the same time, the times of arrival of refracted waves at the surface may be substantially different from the times of arrival of the head waves. For this reason, a correct determination of the nature of the recorded waves may lead to errors in plotting the refracting boundary. Orig. art. has: 9 figures, 8 formulas.

SUB CODE: 08/ SUBM DATE: 00/ ORIG REF: 003/ OTH REF: 000

HW
Card 2/2

KIRSHENBAUM, Ya.M., doktor tekhn.nauk; AVERBUKH, B.A., inzh.; LYUDMIRSKAYA,
N.G., inzh.

Deposition of bronze on steel by friction. Svar. proizv.
no.5825-28 My '64. (MIRA 18:11)

1. Moskovskiy institut neftekhimicheskoy i gazovoy promyshlennosti
imeni Gubkina.

2

ca

Reduction of iron oxides by gaseous reducing agents.

1. The rate of reduction of magnetite iron oxide by hydro-
 gen. (I. I. Chufarov and B. D. Averbukh. J. Phys.
 Chem. (U. S. S. R.) 3, (1959) 8(1814); cf. C. A. 29,
 3011). Samples of magnetic iron oxide of natural origin
 and prepd. from piano wire both show on reduction
 strongly autocatalytic effects. The initial speeds of
 reduction are greater the greater the temp. (350-400°)
 but above 400° the velocity of reduction falls off very
 quickly with time and the curve for 800° crosses that
 for 400° and 600° at about 70% reduction. Above 800°
 this effect again is less marked. Piano-wire magnetite
 shows this effect much more pronouncedly than does
 natural magnetite. The micro- and ultra-pore structures
 are also different on reduction. Reduction proceed in
 two stages, first to FeO, then to Fe. Most rapid, about
 10 min., 90-100% reduction is obtained at about 600°C.
 P. H. Rathmann

ASD-51A METALLURGICAL LITERATURE CLASSIFICATION

The initial rate of reduction of hematite and magnetite by hydrogen. G. I. Chudarov and B. D. Averbukh. Z. phys. Chem. B13, 334-48 (1936); cf. *Acta Physicochem. U. S. S. R.* 6, 917 (1936).—The reduction of hematite and magnetite by H was studied between 100° and 800° and at pressures between 0.1 and 0.001 mm. Hg. The autocatalytic nature of the reaction is satisfactorily explained by the formation of active centers during the course of the reaction. Above 600°, the lower rate as compared with that at lower temp. is due to recryst. of these centers. G. M. Murphy

COMMON ELEMENTS		PROCESSES AND PROPERTY INDEX		COMMON VARIABLE MODES	
<i>CA</i>		Effect of form of intermediate phases on the velocity of the reduction of iron oxide by hydrogen. G. Chufarov and B. Averbukh. <i>Acta Physicochim. U. R. S. S.</i> 4, 617-33(1936); cf. C. A. 30, 8:16^a.—The velocity of reaction of natural cryst. magnetite and hematite with H₂ was measured at intervals of 20° from 300° to 700°. The change in porosity during reduction was followed and the structure at different stages of the reaction investigated by x-ray analysis. The reaction appears to be autocatalytic. FeO is present at all stages of incomplete reduction. Fe₂O₃ is not observed. From 300° to 500° the porosity is independent of T and detd. by the degree of reduction. Above 500° the porosity decreases rapidly with T, while the size of the crystals of α-Fe increases. The temp. coeff. of the reaction is normal up to 550° and low above this temp. The activation energy is calcd. to be 10,500 g.-cal. for magnetite and 19,500 g.-cal. for hematite below 550°. B. C. A.		2	
ASH-SLA METALLURGICAL LITERATURE CLASSIFICATION					
ECONOMICS		ECONOMICS		ECONOMICS	
GROUPS		GROUPS		GROUPS	

the surface. For industrial application a temperature of 1000° C. or higher and a rapid stream of hydrogen to remove the methane formed are necessary. Some form of "regeneration" of the hydrogen (removal of methane and other impurities) would be required. Decarburisation with mill-scale is about five times more rapid than with hydrogen, the carbon reacting much more rapidly with the oxygen of the scale than with hydrogen, the latter merely acting as a protective atmosphere.

CA

p

Study of the oxidation of iron sulfide by oxygen. G. I.
Chufarov and R. D. Averinukh. *J. Gen. Chem. U.S.S.R.*
10, 845-8(1949) (Engl. translation).—See C.A. 43, 7864g.
R. J. C.

PROCESS AND PROPERTY INDEX	
6	Oxidation of iron sulfide by oxygen. (I. I. Chudarov and B. D. Averbukh. <i>Zhur. Obshch. Khim.</i> (J. Gen. Chem.) 19, 837-82 (1949). - By analytical, manometric, x-ray, and magnetic detns., FeS (prepd. either by fusion of Fe + S at 1200°, followed by treatment with 10% H₂ + 10% H₂S at 1050° and cooling in a stream of N₂, or by dissoln. of FeS₂ in a stream of N₂ at 700°), of a surface area of about 0.1 sq.m./g., is oxidized by dry O₂ at as low a temp. as 50° or 100° and as low an initial pressure as 0.1 mm. However, under these conditions, the reaction stops very soon; thus, at 50°, the total consumption of O₂ corresponds to a decrease of the pressure by 0.02 mm. ($\approx 3 \times 10^{-4}$ g. O₂/0.5 g. FeS), at 100° to 0.1 mm., and at 150° to 0.3 mm. At 50°, the amt. of product formed corresponds to one, at 100-150° to 5-15 unimol. layers. Up to 250°, the oxidation takes place without evolution of gas; consequently the product is FeSO₄. The early stoppage of the reaction is due to the dense structure of this product. If the oxidized sample is heated to 600° or higher, the FeSO₄ is partly dissolved to a less dense oxide, and the sample becomes susceptible to renewed low-temp. oxidation. At 350-450°, owing to partial dissoln. of FeSO₄, oxidation proceeds almost to completion, the product being a mixt. of FeSO₄ and Fe oxides. Above 450°, the reaction is limited only by sintering of the particles of the product, a mixt. of Fe₂O₃ with Fe₃O₄, with the ratio Fe₂O₃/Fe₃O₄ increasing with the combustion of S. N. Thon

AVERBUKH, B. D.

USSR/Chemistry - Peroxides

Apr 51

"Dissociation and Reduction of Barium and Calcium Peroxides," B. D. Averbukh, G. I. Chud'arov, Inst of Chem and Metallurgy, Ural Affiliate, Acad Sci USSR

"Zhur Obshch Khim" Vol XXI, No 4, pp 626-631

Results of investigations show: (1) dependence of rate of dissoen of BaO_2 and CaO_2 on pressure of gaseous O_2 ; (2) apparent activation energies; (3) change in equil pressure for dissoen of BaO_2 due to content of O_2 in solid phase; (4) dependence of equil pressure of O_2 on temp in monovariant region. Discusses mech of reduction of BaO_2 and CaO_2 .

182T15

CA

Dissociation and reduction of peroxides of barium and calcium. B. D. Ayubukh and G. I. Chufarov (Chem. Met. Inst., Ural Branch Acad. Sci. U.S.S.R., Sverdlovsk).

Zhur. Obshch. Khim. 21, 826-31; J. Gen. Chem. U.S.S.R. 21, 891-6 (1951) (English translation).—(1) Rates of BaO_2 socn. of BaO_2 (initial active O 7.8%, theory 9.44%) were measured at 600-750°, under O_2 pressures in the gas phase ranging from 0.001 to 200 mm. Hg (close to equil.). Results are plotted on rate of decompn. v (g. O_2 evolved in 30 min.) as a function of the degree of decompn. x . At const. x , the rate equation is $v = k(P - p)$, where p is the prevailing pressure of O_2 , and P the equil. decompn. pressure. With CaO_2 (initial active O 18.23%, theory 22.3%), 300-350°, under p from 10 to 700 mm. Hg (i.e. very far from the equil. disocn. pressure), the rates of decompn. are practically independent of p (on account of $p \ll K, P$). The apparent activation energy for the disocn. of BaO_2 is 45.8, and for CaO_2 40.0 kcal./mole. By extrapolation to $p = 0$, the equil. P for BaO_2 at 650, 700, and 750°, are, resp., 31, 77, and 220 mm. Hg. The equil. P for BaO_2 were further detd. directly, at 600, 700, and 750°, both from the side of disocn. and that of oxidation. Monovariant regions are found with limited soly. and const. P . These values are close to those obtained from the kinetic expts. Use was made of the relation $\log P_{\text{O}_2}^{1/2} = -(H_{\text{O}_2}/4.573T) + (S_{\text{O}_2}/4.573)$, with the unknown entropy S calcd. from the exptl. $P = 220$ mm. Hg at 750°, and the tabular $H = 18,360$ cal. This gives $S_{\text{O}_2} = 24.6$ cal./degree/mole, and $\log P_{\text{O}_2}^{1/2} = (-18,360/4.573T) + 3.634$. Values of P thus calcd. are in agreement with the kinetic calcs. (2) Reduction of BaO_2 or of CaO_2 by gaseous H_2 goes over Ba(OH)_2 or Ca(OH)_2 and is not preceded by a disocn. of the peroxide. With BaO_2 , the reduction is incomplete below 650° owing to the formation of a film of fused Ba(OH)_2 , which prevents access of H_2 ; the reduction goes to completion above 650°, thanks to the disocn. of the Ba(OH)_2 . Similarly, with CaO_2 , the reduction goes to completion above 350°. N. Thon

USSR/Chemistry, Metallurgy - Copper

Jan. 52

"Retarding Effect of Gaseous Reaction Products on the Rate of Reduction of Copper Oxides With Hydrogen and Carbon Monoxide," G. I. Chufarov, B. D. Averbukh, Ye. P. Tatlevskaya, V. K. Antonov, Ural Affiliate, Acad. Sci. USSR, Inst. of Chem. and Metallurgy, Sverdlovsk

"Zhur Fiz Khim" Vol XXVI, No 1, pp 31-38

Gaseous products of the reaction, on being adsorbed at the reaction surface, bring about a sharp lowering of the rate of reduction. A quant

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expression for the retarding effect of CO_2 is given. The retarding effect of water vapor is greater for cuprous oxide than cupric oxide, because the adsorption on cuprous oxide is greater. The relation between the values of adsorption of H_2 and CO is in good agreement with kinetic data for CuO . When Cu_2O is reduced with CO , there is recrystallization of newly formed metallic copper, so that the rate of the reaction is greatly lowered.

211740

AVERBUKH, B. D.

CHUFAROV, G.I., AVERBUKH, B.D., TATIEVSKAIA, E.P., ANTONOV, A.K.

Manganese Oxide

Retarding action of gaseous reaction products on the rate of reduction of manganese oxide with hydrogen and carbon monoxide. Zhur. fiz, khim 16, No. 6, 1952.

Monthly List of Russian Accessions. Library of Congress November 1952. Unclassified.

General Physical Chem.

CA

Retarding action of gaseous reaction products on the rate of reduction of manganese oxides by hydrogen and carbon monoxide. G. I. Chufarov, B. D. Averbukh, B. P. Tat'yevskaya, and V. K. Antonov (Ural Branch, Acad. Sci., Sverdlovsk). *Zhur. Fiz. Khim.* 26, 834-41 (1952); cf. *ibid.* 26, 834-41 (1952). CO ($p_1 = 200$ mm. Hg) + x% CO_2 was circulated over Mn oxides at 330-450°, and the decrease of the partial pressure p_1 was detd. by freezing out CO_2 . The rate of reaction $dp_1/dt = k p_1^n$; p_1 is the partial pressure of CO_2 , and k , n , and a are consts. For MnO_2 at 330° $n = 0.60$; at 450° for Mn_2O_3 and MnO , n was 0.04 and 0.20, resp. Reduction of MnO_2 by H (50-150 mm. Hg, 450°) was retarded by H_2O more than reduction of Mn_2O_3 . Adsorption (a in 10^{-4} g. mol./sq. in.) at 100° and 50 mm. Hg was for H, CO , and CO_2 on MnO , 20.00, 3.35, and 1.55; on Mn_2O_3 , 5.5, 8.1, and 4.9; on MnO_2 , 0.35, 1.00, and 1.70; and on MnO 0.85, 1.30, and 5.80. Between 20° and 100°, a of CO and H on Mn_2O_3 and of H on MnO_2 increased with temp., and a of CO_2 on Mn_2O_3 and CO on MnO_2 decreased. At 10 mm. Hg and 100°, a for H and H_2O on MnO_2 was 2.6 and 8.0, on Mn_2O_3 0.1 and 3.8, and on MnO 0.2 and 8.8, resp. As a rule the rate of reduction increased with a , but the energy of activation must be considered. The retardation of reaction by the reaction product generally was greater the greater was the a of the reaction product as compared with the a of the reducing gas. J. J. Ilkerman

AVERBUKH, D.

Hot Tanning Problems. G. I. Chelarov, M. G. Zhuravlevs.
R. P. Zhuravlevs, B. D. Averbukh and ? K. Antonov.
(Zaur. Prikl. Khim., 1953, 25, 832-833). A discussion of the
drying process is presented.

AVERBUKH, B. D.

Chemical Abst.
Vol. 48 No. 9
May 10, 1954
Metallurgy and Metallography

Effect of flux moisture on dip-tinning of iron. G. I. Zhuravov, M. O. Zhuravleva, M. P. Tatevskaya, B. D. Averbukh, and V. K. Antonov. *Zhur. Priklad. Khim.* 26: 152-5 (1953).—In dip-tinning of Fe, excessive H_2O in $ZnCl_2$ flux dissolves Fe rapidly and forms $FeSn$, scum and sludge. This increases Sn consumption and contaminates the coating with scum. When the flux is almost anhyd., cleaning of Fe is very slow and bare spots may remain on the surface.

The optimum H_2O content of the flux is 1.5-3.5%, corresponding to b.p. 260-275°. The b.p. is an important characteristic of the flux.
E. M. Ekin.

AVERBUKH, B. D.

USSR/Chemistry

Card 1/2

Authors : Chufarov, G. I., Averbukh, B. D., Tatievskaya, E. P., and Antonov, V. K.

Title : Inhibiting effect of gaseous reaction products on the rate of reduction of ferric oxides with hydrogen and carbon monoxide.

Periodical : Zhur. Fiz. Khim. 28, Ed. 3, 490-497, March 1954

Abstract : The authors investigated the effect of gaseous reaction products on the rate of reduction of ferric oxides with carbon monoxide and hydrogen in a pressure range of from 100-250 mm mercury column and also measured the adsorption of basic gases and gases obtained during reduction on the surfaces of the oxides. The inhibiting effect of the gaseous reaction product CO_2 during the reduction of Fe_3O_4 and FeO with carbon monoxide can be computed quantitatively by calculating the rate of reaction according to a certain equation. During reduction of Fe_3O_4 with carbon monoxide and hydrogen at temperatures above 700° there is practically no inhibiting effect of the reaction products during the initial stages, but after

Zhur. Fiz. Khim, 28, Ed. 3, 490-497, March 1954

(additional card)

Card 2/2

Abstract

: Reduction reached 11%, when a greater amount of Fe_2O_3 is formed, the inhibiting effect of carbon monoxide and water vapor becomes great. The experimental material on the inhibiting effect of gaseous reaction products on the rate of reduction of the investigated ferric oxides is in agreement with the data regarding the adsorption of gaseous reducing agents and reaction products on the surface of the mentioned oxides. Seven U.S.S.R. references 1 since 1937. Graphs.

Institution

: Acad. of Sc. U.S.S.R. Ural Branch, Institute of Chemistry and Metallurgy, Sverdlovsk

Submitted

: June 15, 1953

Averbuch, P.D.

2829. POSSIBLE TREATMENT OF WOOD TAR IN RAIL. Kozlov, V.N.,
Chufarov, O.I. and Averbuch, B.D. (Izd. Inst. Khim. Mat. Akad. Nauk SSSR,

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Ural. Fil. (Transl. Int. Chem. Met. Acad. Sci. U.S.S.R., Ural Branch), 1955,
(2), 75-83; abstr. in Chem. Abstr., 1956, vol. 50, 7427). Possible uses
of the birch (I) and pine (II) tars were studied. An antioxidant for
gasoline (III) can be produced by cracking the fraction of I, boiling at
256-2900, obtained in 11.7% yield, calculated on the weight of I, in the
amount of 0.05 g/100 ml III; other fractions can be used as foaming agents in
the flotation process and for production of the oil-formaldehyde resins and
lubricating oils. It can be used as such, as lubricating oils, etc. C.A.

Walt

AVERBUKH, B.D.

USSR/Physical Chemistry, Kinetics, Combustion, Explosion,
Topochemistry, Catalysis.

B-9

Abs Jour : Ref Zhur - Khimiya, No 7, 1957, 22426.

Author : B. D. Averbukh, G. I. Chufarov.

Inst : Not given

Title : The influence of metal oxides admixtures on Mn_3O_4 reduction
by carbon.

Orig Pub : Zh. fiz khimii, 1956, 30, No 8, 1739-1745 (res.angl).

Abstract : The influence of metal oxides and alkali- and alkali earth
metals salts on the rate of Mn_3O_4 (I) reduction by solid car-
bon in a vacuum at 750-950° is studied. Easily reducible
oxides Cu_2O , Fe_3O_4 , Ag_2O , NiO and Co_3O_4 in quantities of 5%
of I weight do not influence materially the rate of reduction;
but the difficultly reducible oxides CaO , MgO , SiO_2 and Al_2O_3
delay I reduction, probably by formation of a surface compound
with I. Addition of 1-10% of $CaCO_3$ or Na_2CO_3 does not influ-
ence considerably reduction of I by graphite. Additions of 1-
10% of K_2CO_3 also of KOH accelerate considerably reduction of
I by graphite and by birch coal. Maximum of acceleration is
obtained at 3% of K_2CO_3 . The reduction of I by birch coal is

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-136-

CHUPAROV, G.I.; TATIYEVSKAYA, Ye.P.; ZHURAVIEVA, M.G.; AVIERBUKH, B.D.;
LISNYAK, S.S.; ANTONOV, V.K.; BOGOSLOVSKIY, V.N.; STAFIYEVA, N.M.

Kinetics and mechanism of the reduction of metal oxides and chemical
compounds. Trudy Inst. met. UFAN SSSR no.2:9-40 '58.

(MIRA 12:4)

(Oxidation-reduction reaction) (Metallurgy)

CHUFAROV, G.I.; AVERBUKH, B.D.; VETRENKO, Ye.A.

Kinetics of zinc sulfide reduction by carbon monoxide and
hydrogen. Trudy Inst.met.UFAN SSSR no.3:43-50 '59. (MIRA 13:4)
(Zinc--Metallurgy)

AVERBUKH, B.D.; CHUFAROV, G.I.

Reduction of zinc sulfide with graphite in a mixture of iron oxides.
Zhur. prikl. khim. 34 no.1:27-31 Ja '61. (MIRA 14:1)

1. Institut metallurgii Ural'skogo filiala AN SSSR.
(Zinc sulfide) (Graphite)

S/076/62/036/011/008/021
B101/B180

AUTHORS: Averbukh, B. D., Braynina, D. Z., Antonov, V. K., and
Chufarov, G. I. (Sverdlovsk)

TITLE: Study of equilibrium conditions in the reduction of manganese ferrite by hydrogen

PERIODICAL: Zhurnal fizicheskoy khimii, v. 36, no. 11, 1962, 2436 - 2441

TEXT: To find out the structure of ferrites and suitable conditions for their production, the reduction of manganese ferrite in hydrogen was studied at 900°C. Manganese ferrites of different compositions were produced by sintering Fe_2O_3 - MnO mixtures at 1200°C in various atmospheres (CO_2 , Ar, $\text{CO}_2 + \text{O}_2$, or air), and by sintering Fe_2O_3 - MnO - Mn_3O_4 mixtures. Debye patterns showed that the resulting ferrites were single-phase. The reduction was performed in a mixture of water vapor ($p_{\text{H}_2\text{O}} = 4.579$ mm Hg) and hydrogen ($p_{\text{H}_2} = 10^{-3} - 10^2$ mm Hg). After equilibrium had been established

Card 1/4

Study of equilibrium conditions in...

S/076/62/036/011/008/021
B101/B180

between ferrite and gas mixture, the water was frozen out, the p_{H_2} measured, the degree of reduction determined from the H_2 consumption, and p_{O_2} the

equilibrium pressure calculated. The phases formed in the reduced ferrite were identified by Debye patterns. Results: Except for those in air, which were higher due to oxidation, the ferrites sintered in different atmospheres showed approximately the same p_{H_2O}/p_{H_2} values with the same degree

of reduction. Ferrites containing excess manganese owing to admixture of Mn_3O_4 , showed higher p_{O_2} due to formation of $Mn_3O_4 - MnFe_2O_4$ solid solu-

tions. During the ferrite reduction, the lattice constant of the spinel phase gradually fell until it was roughly the same as for magnetite. At 10% reduction, a lower oxide phase appeared with an NaCl lattice, the constant of which increased as the reduction proceeded. At 45% reduction, a metallic phase appeared, with the lattice constant of iron (2.861 Å). The reduction of manganese ferrite thus proceeds in two stages: (1) Reduction to the lower oxide phase (Fe, Mn)O via formation of non-ideal solid

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Study of equilibrium conditions in...

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B101/B180

solutions of $MnFe_2O_4$ and Fe_3O_4 ; (2) reduction of the lower oxide phase to iron. a the activities and γ the activity coefficients were calculated for the solid solutions (Table 3). There are 6 figures and 3 tables. The most important English-language reference is: P. K. Foster a. A. J. E. Welch, Trans. Faraday Soc., 52, 1636, 1956.

ASSOCIATION: Institut metallurgii, Ural'skiy filial Akademii nauk SSSR
(Institute of Metallurgy, Ural Branch of the Academy of
Sciences USSR)

SUBMITTED: July 3, 1961

Card 3/4

BRAYNINA, D.Z.; AVERBUKH, B.D.; ZHURAVLEVA, M.G.; CHUFAROV, G.I.

Equilibrium in the reduction of manganese-zinc ferrite by hydrogen.
Zhur.neorg.khim. 9 no.1:230-231 Ja '64. (MIRA 17:2)

1. Ural'skiy filial AN SSSR, Institut metallurgii.

ACCESSION NR: AP4042598

S/0076/64/038/007/1811/1815

AUTHOR: Braynina, D. Z. (Sverdlovsk); Averbukh, B. D. (Sverdlovsk); Zhuravleva, M. G. (Sverdlovsk); Chufarov, G. I. (Sverdlovsk).

TITLE: Equilibrium conditions in the hydrogen reduction of manganese-zinc ferrites

SOURCE: Zhurnal fizicheskoy khimii, v. 38, no. 7, 1964, 1811-1815

TOPIC TAGS: manganese ferrite, zinc ferrite, manganese zinc ferrite, ferrite reduction, ferrite dissociation, ferrite crystal structure, spinel structure, inverse spinel structure

ABSTRACT: Equilibrium conditions at 700 to 900C for the initial stages of hydrogen reduction of manganese-zinc ferrites of varying composition are investigated. The equilibrium constants were determined experimentally and the equilibrium partial pressures of oxygen following dissociation of the ferrites were calculated. The lattice constants were measured. It was shown that both the equilibrium partial pressure of oxygen and the lattice constants of manganese-zinc ferrites depend in a nonlinear manner on the composition. It

Card 1/2

16(4) 16.5500, 16.2000

AUTHOR: Averbukh, B.G.

66812

SOV/155-58-5-1/37

TITLE: Primary Components of Inner Homology Groups

PERIODICAL: Nauchnyye doklady vysshey shkoly. Fiziko-matematicheskiye nauki, 1958, Nr 5, pp 3 - 5 (USSR)

ABSTRACT: The author proves that the group O^k of the internal homologies (see R. Thom [Ref 2_7]) contains for $k < 2p^2 - 2$ no elements of order $p > 2$. The proof is based on the well-known isomorphism $O^k \approx \pi_{m+k}(M_{so(m)})$, $m > k$, where $M_{so(m)}$ is the space constructed by Thom [Ref 2_7]. The author gives 2 theorems and 2 lemmata. There are 3 references, 1 of which is Soviet, 1 American, and 1 Swiss.

ASSOCIATION: Moskovskiy gosudarstvennyy universitet imeni M.V. Lomonosova (Moscow State University imeni M.V. Lomonosov)

SUBMITTED: June 11, 1958

Card 1/1

16(1)

AUTHOR: Averbukh, B.G.

SOV/20-125-1-1/67

TITLE: Algebraic Structure of the Inner Homology Groups (Algebraicheskiye stroyeniye grupp vnutrennikh gomologiy)

PERIODICAL: Doklady Akademii nauk SSSR, 1959, Vol 125, Nr 1, pp 11-14 (USSR)

ABSTRACT: The author starts from the isomorphism $D^k \approx \pi_{m+k}(M_{SO(m)})$, $m > k$, where $M_{SO(m)}$ is the space constructed by Thom [Ref 2], and he shows that the group D^k (k arbitrary) of the inner homologies contains no elements of the order $p > 2$. Furthermore, from the author's results combined with the theorems of Pontryagin [Ref 5], Rokhlin [Ref 3] and other authors there follows that the characteristic numbers and the remainders of Pontryagin form a complete system of inner-homological invariants; i.e. two manifolds are inner-homological then and only then if their characteristic numbers and remainders agree. The author thanks M.M. Postnikov, V.A. Rokhlin and V.G. Boltyanskiy for advices. There are 5 references, 3 of which are Soviet, 2 American, and 1 Swiss.

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